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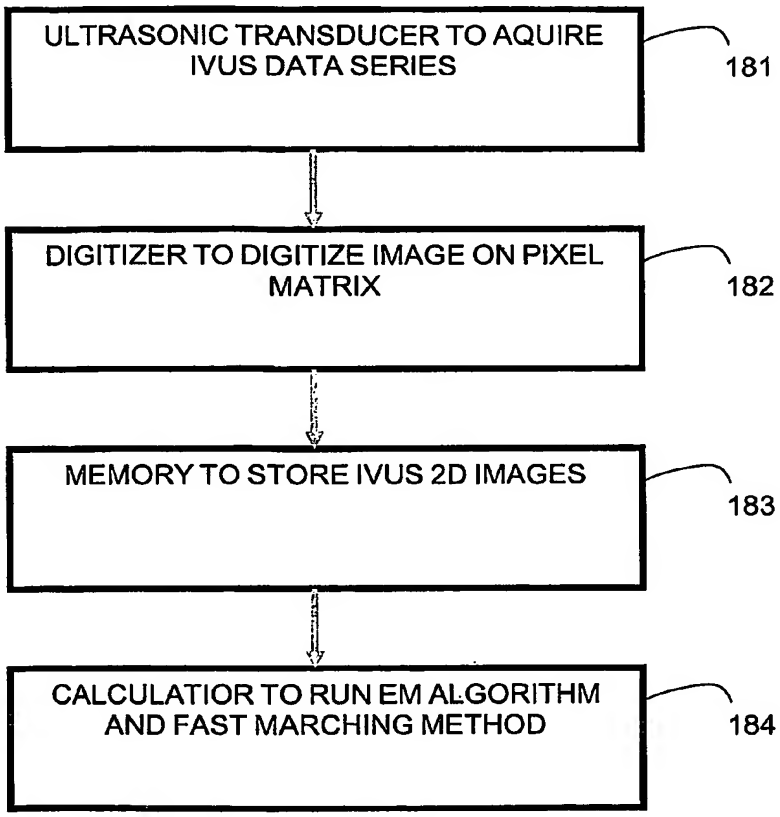
(54) Title: AUTOMATIC MULTI-DIMENSIONAL INTRAVASCULAR ULTRASOUND IMAGE SEGMENTATION METHOD



(57) Abstract: The present invention generally relates to intravascular ultrasound (IVUS) image segmentation methods, and is more specifically concerned with an intravascular ultrasound image segmentation method for characterizing blood vessel vascular layers. The proposed image segmentation method for estimating boundaries of layers in a multi-layered vessel provides image data which represent a plurality of image elements of the multi-layered vessel. The method also determines a plurality of initial interfaces corresponding to regions of the image data to segment and further concurrently propagates the initial interfaces corresponding to the regions to segment. The method thereby allows to estimate the boundaries of the layers of the multi-layered vessel by propagating the initial interfaces using a fast marching model based on a probability function which describes at least one characteristic of the image elements.

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